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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/700,180

11/03/2003

Andrew L. Bliss

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07/26/2006

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EXAMINER

INGBERG, TODD D

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,180

Applicant(s)

BLISS ET AL.

Examiner

Todd Ingberg

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/3/03</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 1 – 19 have been examined.

Information Disclosure Statement

1. The Information Disclosure Statement filed November 3, 2003 has been considered in part. Portions failed to comply with the requirement of providing a date on the form.

Drawings

2. The drawings filed November 3, 2003 have been accepted.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The current focus of the Patent Office in regard to statutory inventions under 35 U.S.C. § 101 for method claims and claims that recite a judicial exception (software) is that the claimed invention recite a practical application. Practical application can be provided by a physical transformation or a useful, concrete and tangible result. No physical transformation is recited and additionally, the final result of the claim is a debugger for managed code which is not a tangible result because the result is not tangibly embodied on a compute readable medium. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101.

http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN

#6,996,809 B2 Muhlestein et al filed July 6, 2001 (Mcode) in view of How Debuggers Work, by Jonathan B. Rosenberg 1996 (Dbug).

Claim 1

A method for using a mirror code process to analyze a managed code process, the method comprising: running the managed code process in a runtime environment, whereby the running managed code process writes to and reads from a first address space while running;

running the mirror code process, whereby the running mirror code process writes to a second address space while running, the second address space not overlapping the first address space; and

using cross-process memory access by the mirror code process to write at least a portion of the contents of the first address space into the second address space.

Rejection for claim 1

Mcode teaches the debugging of managed code (Mcode, figure 2). The debugger storage space as taught by debug information (Debug, pages 218 and 228) and Home tables (Debug, page 154) in support of remote debugging (Debug, pages 81-82,84). Mcode teaches debugging a Managed Code environment (Mcode, Figure 2) and Debug teaches the internals of debugging local and remote. Therefore, it would have been obvious to combine Mcode and Dbug because debugging code such as managed code makes code more reliable.

Claim 2

The method according to claim 1, further comprising the step of analyzing the portion of the contents of the first address space written into the second address space by the mirror code process, to identify flaws with respect to the managed code process.

Rejection for claim 2

In view of the rejection for claim 1. Debug teaches the present of Debug Information (Debug, pages 218 and 228). Which is a second address space for to mirror code and perform debugger functions (Debug, pages 218 and 228).

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Claim 9

A computer-readable medium having thereon computer-executable instructions for performing the method of claim 2.

Rejection for claim 9

As per the rejection for claim 8.

Claim 3

The method according to claim 1, wherein using cross-process memory access by the mirror code process to write at least a portion of the contents of the first address space into the second address space comprises caching by the mirror code process at least a portion of the contents of the first address space.

Rejection for claim 3

As per the rejection for claim 1 and Remote Stack (Debug, pages 85 and 92).

Claim 4

The method according to claim 3, wherein caching by the mirror code process at least a portion of the contents of the first address space comprises constructing a cache that omits duplicate addresses from first address space overlapping address ranges.

Rejection for claim 4

As per the rejection for claim 1 and Debug tables – symbol tables (Debug, pages 157-160).

Claim 5

The method according to claim 3, wherein caching by the mirror code process at least a portion of the contents of the first address space comprises constructing a cache that includes duplicate addresses from first address space overlapping address ranges.

Rejection for claim 5

As per the rejection for claim 1 and Remote Stack (Debug, pages 85 and 92).

Claim 6

The method according to claim 1, wherein the runtime environment and the mirror code process run on different first and second respective computing devices, and wherein using cross-process memory access by the mirror code process comprises retrieving information at the second computing device from the first computing device.

Rejection for claim 6

As per the rejection for claim 1 and Remote debugging (Debug, pages 81-82,84).

Claim 7

The method according to claim 6, wherein the first and second computing devices have CPUs of mutually distinct types.

Rejection for claim 7

Dbg teaches the debugging of the programming JAVA which supports computing devices have CPUs of mutually distinct types. (Dbg, pages 77,79,81-94).

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Claim 8

A computer-readable medium having thereon computer-executable instructions for performing the method of claim 1.

Rejection for claim 8

The reference Dbug refers to executable tools (Dbug, page 32, Figure 2.9, commercial tools).

Claim 10

A computer-readable medium having thereon computer-executable instructions for performing the method of claim 7.

Rejection for claim 10

As per the rejection for claim 8.

Claim 11

A method of compiling a source code body of code into a mirror code body of code comprising:
analyzing the source code body to identify in-process pointers; and
replacing in the mirror code body at least a portion of the identified in-process pointers with cross-process pointers such that when the mirror code body is run in a first process the cross-process pointers are usable to read information from a memory of a second process.

Rejection for claim 11

As per the rejection for claim 1 and Remote debugging (Debug, pages 81-82,84) and the ability to perform debugger function of Tracing of processes (Dbug, page 62). Mcode teaches debugging a Managed Code environment (Mcode, Figure 2) and Debug teaches the internals of debugging local and remote. Therefore, it would have been obvious to combine Mcode and Dbug because debugging code such as managed code makes code more reliable.

Claim 12

A computer-readable medium having thereon computer-executable instructions for performing the method of claim 11.

Rejection for claim 12

As per the rejection for claim 8.

Claim 13

The method according to claim 11, wherein replacing at least a portion of the identified in-process pointers with cross-process pointers further comprises placing in the mirror code body a retrieval routine associated with each such cross-process pointer, wherein the retrieval routine is operable to use the respective cross-process pointer to read from the memory of the second process.

Rejection for claim 13

As per the rejection for claim 1 and Remote debugging (Debug, pages 81-82,84) and the ability to perform debugger function of Tracing of processes (Dbug, page 62).

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Claim 14

A computer-readable medium having thereon computer-executable instructions for performing the method of claim 13.

Rejection for claim 14

As per the rejection for claim 8.

Claim 15

The method according to claim 11, wherein replacing in the mirror code body at least a portion of the identified in-process pointers with cross-process pointers further comprises:

- scanning a listing of global data addresses in the source code body of code;
- determining each global address in the memory of the second process; and
- encoding each such global address in the mirror code body as data.

Rejection for claim 15

As per the rejection for claim 1

Claim 16

The method according to claim 11, wherein replacing in the mirror code body at least a portion of the identified in-process pointers with cross-process pointers further comprises utilizing a vtable pointer to identify the size of a class to be mirrored by the mirror code body.

Rejection for claim 16

As per the rejection for claim 1 and virtual table support (Dbug, page 163).

Claim 17

The method according to claim 11, further comprising additionally compiling the source code body of code into runtime code body, wherein in-process pointers in the source code remain as in-process pointers in the runtime code body.

Rejection for claim 17

As per the rejection for claim 1 and the runtime functionality of a breakpoint where the pointers are in-process pointers (Dbug, pages 107 - 109).

Claim 18

The method according to claim 17, further comprising:

- running the mirror code body in the first process, whereby the first process writes to and reads from a first memory space while running;

- running the runtime code body in the second process via a runtime environment, whereby the second process writes to and reads from the memory of the second process while running; and

- using cross-process memory access by the first process to write at least a portion of the contents of the memory of the second process into the first memory space.

Rejection for claim 18

As per the rejection for claim 1 and Remote debugging (Debug, pages 81-82,84) and the ability to perform debugger function of Tracing of processes (Dbug, page 62).

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Claim 19

A system for compiling a source code body of code into a mirror code body of intermediate language code comprising:

means for analyzing the source code body to identify in-process pointers; and
means for replacing in the mirror code body at least a portion of the identified in process pointers with cross-process pointers such that when the mirror code body is run in a first process the cross-process pointers are usable to read information from a memory of a second process.

Rejection for claim 19

As per the rejections for claim 11 (replace) and claim 13 (cross pointer) and compiler (Debug, page 157 – 160). Compilers inherently produce intermediate code. Mcode teaches debugging a Managed Code environment (Mcode, Figure 2) and Debug teaches the internals of debugging local and remote. Therefore, it would have been obvious to combine Mcode and Dbug because debugging code such as managed code makes code more reliable.

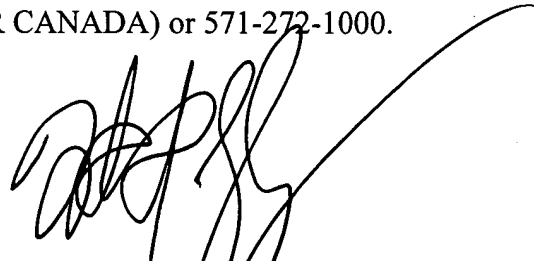
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Todd Ingberg whose telephone number is (571) 272-3723. The examiner can normally be reached on during the work week..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Todd Ingberg
Primary Examiner
Art Unit 2193

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